

**WHAT IS CLAIMED IS:**

1. A vehicle control system, comprising:
  - an engine as a main drive source of a vehicle;
  - 5 an engine control means configured to control said engine;
  - an auxiliary machine that is directly or indirectly driven by said engine; and
  - an auxiliary machine control means configured to control said auxiliary machine,
  - 10 wherein, as means for estimating a physical quantity related to a motive power of said auxiliary machine, said engine control means includes a first auxiliary machine motive power estimating section, and said auxiliary machine control means includes a second auxiliary machine motive power estimating section, and
  - 15 wherein, an estimation precision of an auxiliary machine motive power estimated by said second auxiliary machine motive power estimating section is set higher than an estimation precision of an auxiliary machine motive power estimated by said first auxiliary machine motive power estimating section.
- 20 2. A vehicle control system according to claim 1,
  - wherein said engine control means sends an estimation condition to said auxiliary machine control means, and
  - wherein said auxiliary machine control means estimates the auxiliary machine motive power based on the estimation condition by said second
  - 25 auxiliary machine motive power estimating section and sends an estimated value to said engine control means.
3. A vehicle control system according to claim 2,
  - wherein the estimation condition is at least one of a response delay time, an estimation timing, and an estimation precision of the auxiliary
  - 30 machine motive power estimation.
4. A vehicle control system according to claim 3,
  - wherein said engine control means estimates the auxiliary machine

motive power by said first auxiliary machine motive power estimating section when said second auxiliary machine motive power estimating section does not satisfy at least one of the estimation conditions.

- 5 5. A vehicle control system according to any one of claim 1 to claim 4, further comprising:

an estimated motive power deviation monitoring means configured to calculate a deviation between the auxiliary machine motive powers that are respectively estimated by said first auxiliary machine motive power estimating section and said second auxiliary machine motive power estimating section  
10 and to monitor whether the deviation is equal to or larger than a predetermined value,

wherein said engine control means estimates the auxiliary machine motive power by said first auxiliary machine motive power estimating section when the deviation becomes equal to or larger than the predetermined value.

- 15 6. A vehicle control system according to claim 5,

wherein said engine control means judges that said second auxiliary machine motive power estimating section is in failure when the deviation continues for a predetermined time or longer, a predetermined frequency or more, or a predetermined number of times or more.

- 20 7. A vehicle control system according to claim 5 or claim 6,

wherein said engine control means corrects the auxiliary machine motive power estimated by said second auxiliary machine motive power estimating section when the deviation is larger than a first predetermined value and is smaller than a second predetermined value that is larger than the  
25 first predetermined value.

8. A vehicle control system according to any one of claim 5 to claim 7, wherein the deviation is compared under a predetermined condition.

9. A vehicle control system according to any one of claim 1 to claim 8, wherein the estimated motive power is used for at least one of an  
30 engine control, a transmission control, and an auxiliary machine control.

10. A vehicle control system according to any one of claim 1 to claim 9, wherein said auxiliary machine is at least one of an airconditioning

compressor whose refrigerant discharge rate per one rotation is allowed to be set by an external signal, an airconditioning compressor whose rotation speed is allowed to be set by an external signal, a power generating alternator whose power generation rate is allowed to be set by an external signal, an engine  
5 cooling fan whose rotation speed is allowed to be set by an external signal, an engine cooling fan whose air flow rate is allowed to be set by an external signal, a cooling water pump whose rotation speed is allowed to be set by an external signal, a cooling water pump whose water flow rate is allowed to be set by an external signal, an auxiliary water pump for a heater whose rotation  
10 speed is allowed to be set by an external signal, and an auxiliary water pump for a heater whose water flow rate is allowed to be set by an external signal.